

Abstract

An optical transmission line and an optical transmission system, the handling of which is easy, and in which transmission loss and the absolute value of cumulative chromatic dispersion is small over a wide wavelength range are proposed. The optical transmission system has a transmitter, a receiver and an optical transmission line. The optical transmission line has an optical transmission fiber and a dispersion compensating fiber. The optical transmission fiber has a chromatic dispersion of $+4 \sim +10 \text{ ps} \cdot \text{nm}^{-1} \cdot \text{km}^{-1}$ and a dispersion slope of $0 \sim +0.04 \text{ ps} \cdot \text{nm}^2 \cdot \text{km}^{-1}$ at the 1550 nm wavelength and is installed in a relay section. The dispersion compensating fiber has a chromatic dispersion of $-40 \text{ ps} \cdot \text{nm}^{-1} \cdot \text{km}^{-1}$ or less and a dispersion slope of $-0.10 \text{ ps} \cdot \text{nm}^2 \cdot \text{km}^{-1}$ or less at the 1550 wavelength and is wound in a coil to be put in a repeater.